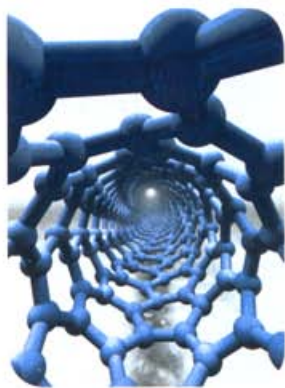


Nanotubes: small technology — big risk?

There may be a very large downside to this century's 'miracle material'.



While it might have a big name, nanotechnology deals with the tiniest materials. Already in use in many everyday household products from sunscreen to dishwashers, nanotechnology has been lauded by many as creating a miracle material of the 21st century.

Nanotubes — carbon atoms rolled into a cylinder — are an innovation being developed for use in new drugs, energy-efficient batteries and high-tech sporting equipment. Described as the 'poster child' for nanotechnology, nanotubes are described as being as light as plastic and as strong as steel.

While the advantages of this super material are many, there have been concerns about the safety of nanotechnology. Recently, a major study published in the magazine *Nature Nanotechnology* suggests that inhaling certain types of nanotubes could lead to the formation of mesothelioma, a lung cancer usually associated with exposure to asbestos.

The study revealed that mice exposed to long, straight carbon nanotubes developed conditions that precede mesothelioma. However, the good news is that researchers didn't dismiss all nanotubes as potentially harmful, as the study found that while the long thin structures could be harmful if inhaled, the shorter and curlier nanotubes don't provide a health risk.

Ying Chen, Group Leader of Nanotube Research at the Australian National University, thinks this study highlights the need for further research across a wide range of nano materials. "This current research is like an alarm and a warning that we need to be careful. We need more research and proper regulations."

Dr Andrew Maynard of the Woodrow Wilson International Center for Scholars, and a co-author of the research paper, says the study is a wake-up call for nanotechnology. "As a society, we cannot afford not to exploit this incredible material, but neither can we afford to get it wrong — as we did with asbestos." ■